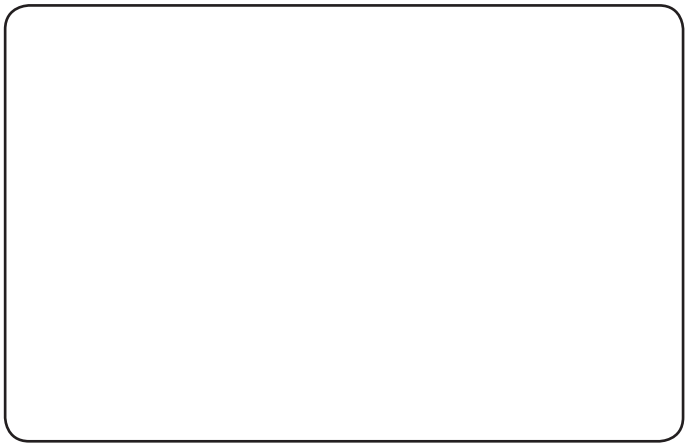
CARPIGIANI



INSTRUCTION HANDBOOK

193 P/SP N

We wish to thank you for the preference granted to us by purchasing one of **CARPIGIANI** machines.

To the best guarantee, since 1993 **CARPIGIANI** has submitted its own Quality System to the certification according to the international Standard ISO 9001, nowadays its production has got UNI-EN-ISO 9001:2008 Certified Quality System.

Moreover, **CARPIGIANI** machines comply with following European Directives:

- "Machinery" Directive 2006/42/EC,
- "Low Voltage" Directive 2006/95/EC,
- "EMC" Directive 2004/108/EC,
- "PED" Directive 97/23/EC,
- Regulation 2004/1935/EC relating to "Materials and articles in contact with foodstuffs"

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FOREWORD

INSTRUCTION HANDBOOK

Editing this handbook, it was taken into due account European Community directions on safety standards as well as on free circulation of industrial products within E.C.

PURPOSE

This handbook was conceived taking machine users' needs into due account.
Topics relevant to a correct use of the machine have been analyzed in order to keep unchanged in the long run quality features charachterizing **CARPIGIANI** machines all over the world.
A significant part of this handbook refers to the conditions necessary to the machine use and to the necessary procedure during cleanout as well as routine and special maintenance.
Nevertheless, this handbook cannot meet all demands in details. In case of doubts or missing information, please apply to:

CARPIGIANI Via Emilia, 45 - 40011 Anzola dell'Emilia (Bologna) - Italy
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HANDBOOK STRUCTURE

This handbook is divided in sections, chapters and subchapters in order to be consulted more easily.

Section
A section is the part of the handbook identifying a specific topic related to a machine part.

Chapter
A chapter is that part of a section describing an assembly or concept relevant to a machine part.

Subchapter
It is that part of a chapter detailing the specific component of a machine part.

It is necessary that each person involved in the machine operation reads and clearly understands those parts of the handbook of his/her own concern, and particularly:

- The Operator must read the chapters concerning the machine star-up and the operation of machine components.
- A skilled technician involved in the installation, maintenance, repair, etc., of the machine must read all parts of this handbook.

ADDITIONAL DOCUMENTATION

Along with an instruction manual, each machine is supplied also with additional documentation:

- **Part list**: a list of spare parts which is delivered together with the machine for its maintenance.
- **Wiring diagram**: a diagram of wiring connections is placed in the machine.

Before using the machine read carefully the instruction handbook.
Pay attention to the safety instructions.

CONVENTIONAL SYMBOLS

CAUTION: ELECTRIC SHOCK DANGER
The staff involved is warned that the non-obsevance of safety rules in carrying out the operation described may cause an electric shock.

CAUTION: GENERAL HAZARD
The staff involved is warned that the operation described may cause injury if not performed following safety rules.

NOTE
It points out significant information for the staff involved.

WARNINGS
The staff involved is warned that the non-observance of warning may cause loss of data and damage to the machine.

PROTECTIONS
This symbol on the side means that the operator must use personal protection against an implicit risk of accident.

QUALIFICATION OF THE STAFF

MACHINE OPERATOR
He/she is an unskilled person , who has no specific expertise and can only carry out easy chores, such as the machine operation by means of controls available on the push-button panel, and filling and drawing of products used during operations.

MAINTENANCE ENGINEER
He/she is a skilled engineer for the operation of the machine under normal conditions; he/she is able to carry out interventions on mechanical parts and all adjustments, as well as maintenance and repairs. He/she is qualified for interventions on electrical and refrigeration components.

CARPIGIANI ENGINEER
He/she is a skilled engineer the manufacturer assigned to field interventions for complex jobs under particular conditions or in accordance with agreements made with the machine's owner.

SAFETY

When using industrial equipment and plants, one must be aware of the fact that drive mechanisms (rotary motion), high voltage components, as well as parts subject to high temperatures may cause serious damage to persons and things.
Who is in charge of plant safety must be on the look-out that:

- any incorrect use or handling shall be avoided;
- safety devices must neither be removed nor tampered with;
- the machine shall be regularly serviced;
- only original spare parts are to be used especially as far as those components with safety functions are concerned (ex.: protection microswitches, thermostats);
- suitable personal protective equipment is worn;

To achieve the above, the following is necessary:

- at the working place an instruction manual relevant to the machine should be available;
- such documentation must be carefully read and requirements must conse quently be met;
- only adequately skilled personnel should be assigned to electrical equipment;
- be on the look out that no technician will ever carry out interventions outside his own knowledge and responsibility sphere.

QUALIFICATION OF THE STAFF

Staff attached to the machine can be distinguished according to training and responsibility as follows:

OPERATOR

- A person who has not necessarily a high technical knowledge, just trained for ordinary operation of the machine, such as: startup, stop, filling, basic maintenance (cleanout, simple blocking, instrumentation checkings, etc.).

SKILLED ENGINEER

- A person enganged on more complicated operations of installation, maintenance, repairs, etc.

IMPORTANT!
One must be on the look-out that the staff does not carry out any operation outside its own sphere of konwledge and responsibility.

***NOTE*:**
According to the standard at present in force, a SKILLED ENGINEER is who, thanks to:
- training, experience and education,
- knowledge of rules, prescriptions and interventions on accident prevention,
- knowledge of machine operating conditions,
is able to realize and avoid any danger and has also been allowed by the person in charge of plant safety to carry out all kinds of interventions.

WARNING

When installing the machine, insert a differential magnetothermal protection switch on all poles of the line, adequately sized to the absorption power shown on machine data plate and with contact opening of 3 mm at least.

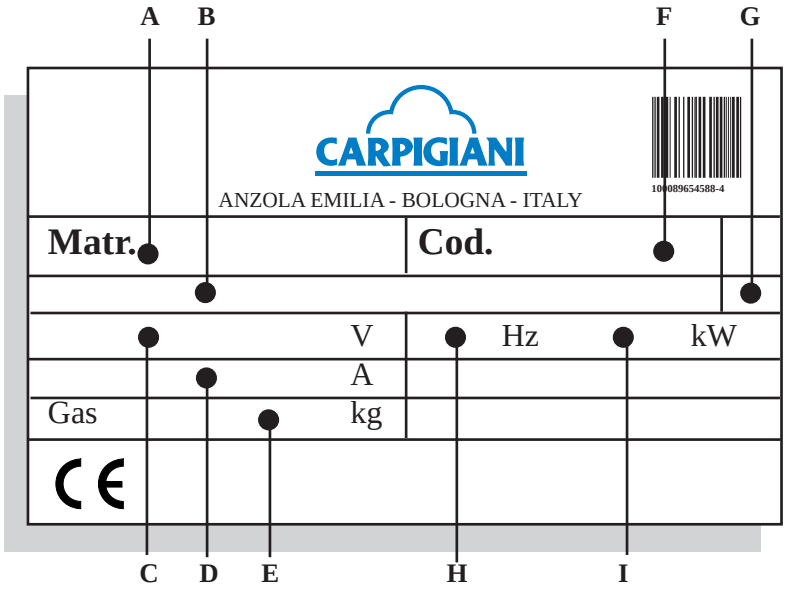
- Never put your hand into the machine, alike during production and cleaning operations. Before carrying out any maintenance operation, make sure that the machine is in "**STOP**" position and main switch has been cut out.
- It is forbidden to wash the machine by means of a bolt of water under pressure.
- It is forbidden to remove panels in order to reach the machine inside before having disconnected the machine.
- **CARPIGIANI** is not responsible for any accident that might happen during operation, cleaning and/or servicing of its units, if this warning has not been fully complied with.

1. GENERAL INFORMATION

1.1 GENERAL INFORMATION

1.1.1 Manufacturer's identification data

The machine has a data plate carrying manufacturer data, machine type and serial number, assigned when it is manufactured.
Copy of machine data plate to be found on first page of this handbook.



LEGEND:

A= Serial number
B= Machine type
C= Voltage
D= Main-switch amperometric value
E= Gas type and weight
F= Machine code
G= Condensation
H= Frequency
I= Power input

1.1.2 Information about service

All operations of routine maintenance are here described in section "Maintenance"; any additional operation requiring technical intervention on the machine must be cleared with the manufacturer, who will also examine the possibility of a factory technician field intervention.

1.1.3 Information to the user

- The manufacturer of the machine is at user's disposal for any explanation and information about the machine operation.
- In case of need, please call the local distributor, or the manufacturer if no distributor is available.
- Manufacturer's service department is available for any information about operation, and requests of spare parts and service.

1.2 INFORMATION ABOUT THE MACHINE

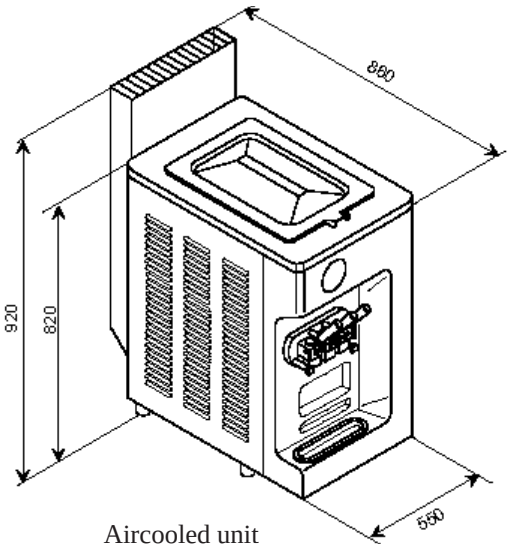
1.2.1 General data

Counter-top machine to immediately produce and distribute soft express ice cream in two flavours + mixed, available with pump to ensure a higher overrun.
CARPIGIANI recommends to always use high quality mix for ice cream production in order to satisfy your customers, even the most hard-to-please ones. Any saving made to the prejudice of quality will surely turn into a loss much bigger than the saving itself.

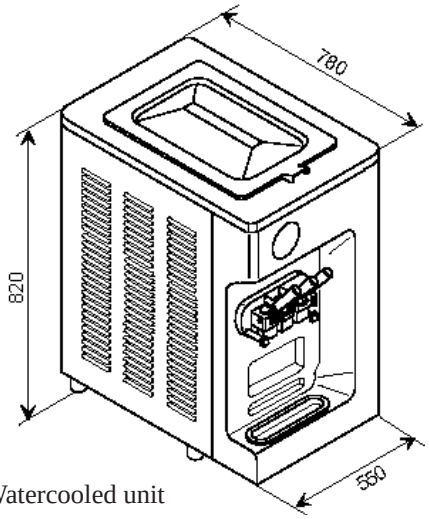
Bearing in mind the above statements, please take heed of the following suggestions:

- Make your mixes yourselves from high quality natural ingredients or buy them from reliable companies.
- Follow closely instructions given by your mix supplier for the preparation of the mixes.
- Do not alter your mix supplier's recipies, by adding, for instance, water or sugar.
- Taste ice cream before serving it and start selling it only if entirely satisfactory.
- Make sure your staff always keeps the machine clean.
- Have your machine serviced always by companies authorized by **CARPIGIANI**.

1.2.2 Machine layout



Aircooled unit



Watercooled unit

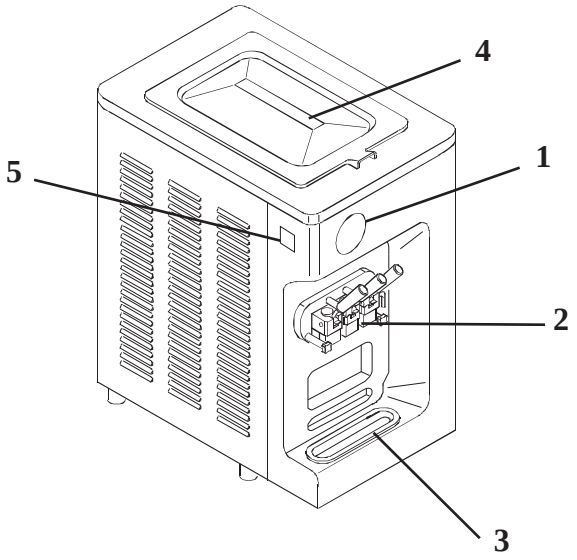
1.2.3 Technical features

MODEL	Hourly production *	Hopper capacity liters	Flavors	Electrical supply			Installed power	Net weight kg
				Volt	Phase	Cycle	kW	
193 P/SP N air	35 Kg	12 + 12	2 + mixed	400	3	50	4,4	173
193 P/SP N water	35 Kg	12 + 12	2 + mixed	400	3	50	4,1	173

* The hourly production and the mix quantity for each ice cream can vary, according to the temperature and the type of mix used and the increase in volume (over-run) desired.

1.2.4 Machine sets location

Legend:
1. control panel
2. Freezing cylinder front lid
3. Drip tray shelf
4. Mix tank cover
5. Drip drawer



1.3 INTENDED USE

The machines must be used solely for the purpose described in chapter 1.2.1, “General information” within the functional limits decribed below.

Voltage	±10%
Min air temperature	10°C
Max air temperature	43°C
Min water temperature	10°C
Max water temperature	30°C
Min. water pressure	0,1 MPa (1 bar)
Max water pressure	0,8 MPa (8 bar)
Max relative humidity	85%

The machine has been designed for its use in places which are not subject to explosion-proof standards; its use is thus bound to conforming places and normal atmospher

1.4 NOISE

The steady acoustic pressure level weighed A in a working place alike by watercooled and by aircooled machines is less than 70 dB(A).

1.5 STORING A MACHINE

The machine must be stored in a dry and dump-free place.
Before storing the machine, wrap it in a cloth in order to protect it against dust and else.

1.6 DISPOSAL OF PACKING STUFFS

When opening the packing crate, divide packing stuffs per type and get rid of them according to laws in force in machine installation country.

1.7 WEEE (Waste Electrical and Electronic Equipment)

In conformity with the European Directives 2006/66/EC, on batteries and accumulators and waste batteries and accumulators, and 2002/96/EC, also known as WEEE, the presence of the symbol on the side of the product or packaging means that the product must not be disposed of with normal urban waste. Instead, it is the user’s responsibility to dispose of this product by returning it to a collection point designated for the recycling of electrical and electronic equipment waste. Separate collection of this waste helps to optimize the recovery and recycling of any reclaimable materials and also reduces the impact on human health and the environment.
For more information concerning the correct disposal of this product, please contact your local authority or the retailer where this product was purchased.

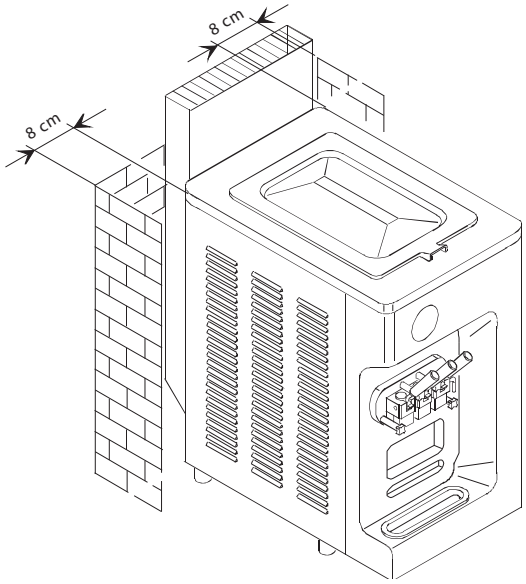
2. INSTALLATION

2.1 ROOM NECESSARY TO THE MACHINE USE

The machine must be installed in such a way that air can freely circulate allaround.
Rooms for the approach to the machine must be left free in order to enable the operator to act without constraint and also to immediately leave working area, if need be.

ATTENTION
MACHINES WITH AIRCOOLED CONDENSER must be installed no closer than 8 cm to any wall in order to allow free air circulation around the condenser.

NOTE
An insufficient air circulation affects operation and output capacity of the machine.



2.2 MACHINE WITH AIRCOOLED CONDENSER

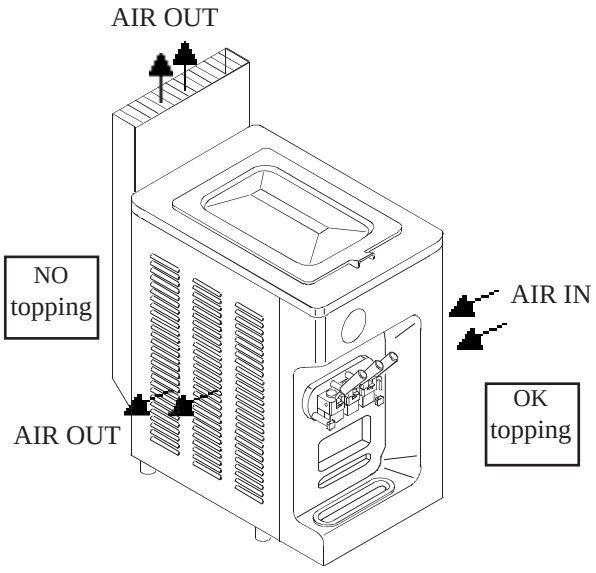
Machines with aircooled condenser must be installed no closer than 8 cm to any wall in order to allow free air circulation around the condenser.

NOTE
An insufficient air circulation affects operation and output capacity of the machine.

2.2.1 Airflow

The ***CARPIGIANI 193 P/SP N*** machine is provided with an internal fan motor which takes fresh air from the right panel of the machine and exhausts the heated air through the left panels and through the stack on the rear of the machine

IMPORTANT
Do not place topping containers, syrup containers or other products, in front of the left panel of the machine because the hot air flow increases the temperature of the products or may melt them.



2.3 MACHINES WITH WATERCOOLED CONDENSER

To make the machine run, a watercooled machine must be connected to running water supply, or to a cooling tower. Water must have a pressure of 1 Bar at least and a delivery at least equal to the estimated hourly consumption. Connect inlet pipe marked by plate “Water Inlet” to water supply installing a shut-off valve, and outlet pipe marked by plate “Water Outlet” to a drain pipe, installing a shut-off valve.

2.3.1 Water valve adjustment

WARNING
If water valve must be reset, this operation will have to be carried out by skilled personnel, only. Valve adjustment must be carried out in such a way that no water flows when machine is off and lukewarm water flows when machine is on.

NOTE:
Water consumption increases if temperature of entering water is above 20°C.

ATTENTION:
Do not leave the machine in a room with temperature below 0°C without first draining water from the condenser.

2.4 ELECTRIC CONNECTION

Before connecting the machine to the mains, check that machine voltage indicated in data plate corresponds with the mains (see sec. 1.1.1 point C).
Insert a differential magnetothermal protection switch adequately sized to absorption capacity required (see sec. 1.1.1 point D) and with contact opening of 3 mm at least.

WARNING
Yellow/green ground wire must be connected to a good ground outlet.

Rotation direction by three-phased machines
The beater rotates anticlockwise.

Reversing rotation direction
To reverse the direction rotation, when wrong, it is necessay to interchange two of the three leads coming from the circuit breaker.

2.4.1 Replacement of power supply cord
If the machine main cable is damaged, it must be replaced through a cable with similar features. Replacement will have to be carried out by skilled technicians only.

2.5 REFILLING

Motor installed in the machine is of the type with lubrication for life; no action of checking/ replacing or topping up is necessary. Gas filling necessary to the freezing system is carried out at **CARPIGIANI** works during machine postproduction testing. If a gas addition happens to be made, this must be carried out by skilled technicans, only, who can also find out trouble origin.

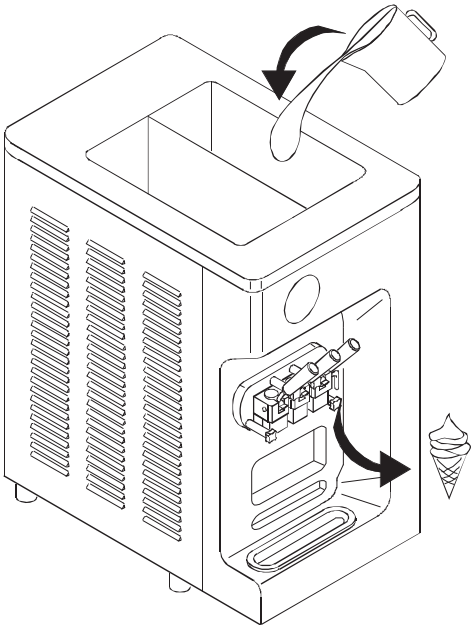
2.6 MACHINE TESTING

A postproduction test of the machine is carried out at **Carpigiani** premises; Operation and output functionality of the machine are thoroughly tested. Machine test at end user’s must be carried out by skilled technicians or by one of **CARPIGIANI** engineers. After the machine positioning and correct connections, also carry out all operations necessary to functional check and test of the machine.

3. DIRECTION FOR USE

3.1 MACHINE CONFIGURATION

The machine has a motor to drive the beater, and a cooling system with water or air condenser. **Soft ice cream is prepared by filling the tanks with cold mix (+4°C) and starting the automatic production cycle, until the ideal ice cream consistency set by CARPIGIANI is reached.** Thanks to the pump, the mix enters the freezing cylinder already mixed with air; ice cream is produced only when it needs to be served. The spigot head allows a single portion of soft ice cream to be distributed. At the same time, the same amount of mix moves from the tanks into the freezing cylinders.



3.2 ELECTRONIC CONTROL KEYBOARD AND BUTTON FUNCTIONS

Details of the panel are shown in the picture below.

Display
On turning the machine on and during its operation, a series of messages are displayed on the screen.

Led indicators
The led indicator lights up when the function corresponding to the symbol next to it is activated.

STOP key
In this function, your machine is off and relevant led (backlighted) is on. From Stop position you can enter in any machine function. For the change, IT IS always NECESSARY to first return to STOP. On the display:

10:33:21 Fri

If you leave the machine in Stop when mix is above the level, the message "Why in STOP ??" will be displayed after 30" so as to alert the user to set the machine at Production, Pasteurization or Storage modes.

PRODUCTION key
The function of Production can only be entered if the mix has not reached the low lovel. The product is cooled in the cylinder till its programmed consistency value is reached (HOT).

As soon as you enter in Production, you also enter in a menu through which you can set the type of product you may wish to serve from each of the two sides, i.e., SoftIce (custard), WaterIce (fruit) or Yogurt; you now have following display:

Custard Custard

This window shows the type of product served from each of the two sides:
SoftIce (left) = side 1 produces Softice
SoftIce (right) = side 2 produces Softice
What has been illustrated is the first page of the menu; by pressing and holding the Production key you access the following combinations, specifically:
SoftIce WaterIce (Custard in side 1 and Fruit on side 2)

SoftIce Yogurt (Custard in side 1 and Yoghurt in side 2)
WaterIce SoftIce (Fruit in side 1 and Custard in side 2)
WaterIce WaterIce (Fruit in side 1 and Fruit in side 2)
WaterIce Yogurt (Fruit in side 1 and Yoghurt in side 2)
Yogurt SoftIce (Yoghurt in side 1 and Custard in side 2)
Yogurt WaterIce (Yoghurt in side 1 and Custard in side 2)
Yogurt Yogurt (Yoghurt in side 1 and Yoghurt in side 2)

If one side is disabled the only option allowed and displayed in the menu is the choice of the type of product in the active side.
Once the desired combination has been displayed, you shall wait for 3 seconds (no key needs be pressed) and the machine will automatically enter in the selected type of production, so loading relevant settings.

You will automatically enter in Production mode, now, and the display will be as follows:

Ice cream Ready!
TEV +4°C L-14

The first line indicates whether ice cream is ready to be dispensed (Icecream Ready!) or not yet (Do not Serve!).
If the message is Do not Serve!, it means that ice cream has not yet reached its programmed consistency and you shall consequently wait .
The second line indicates the temperature in the hopper the number of days to next machine wash. The example above shows there are 14 days to next wash.By pressing Production you pass to the various “windows” or screens hereafter described:

Hopper ↓ +014°C
↓ +015°C ↓ +013°C

The first line (top) of this window shows the Hopper temperature:
↓ = on, when cooling the hopper +014°C=temperature in the hopper (TEV)
The second line shows the temperature of the two Cylinders:
↓ left = on, when cooling the cylinder 1 +015°C=temperature in cylinder 1 (TEC1)
↓ right = on, when cooling cylinder 2 +013°C=temperature in cylinder 2 (TEC2)

Hot=085 Hot=085
Set=100 Set=100

The first line (top) of this window shows the following:
HOT=085: reading of current consistency in the cylinders of both sides
The second line shows the following:
Set=100 : Set HOT of both side (left side 1, right side 2)

Today’s Cones
12345

This window shows the Cones of the day (starting 0:00 to 23.59):
12345 = number of conses dispensed in the day

Total Cones
0923456780

This window shows the no. of total Cones:
0923456780 = number of total cones dispensed.

TC1 +013 TC2 +013
TE1 -012 TE2 -012

This window shows the sensors (neither °C nor °F are displayed):
TEC = Cylinder Thermostat (1 = side 1, 2 = side 2)
TE = Evaporator Thermostat (1 = side 1, 2 = side 2)

TEV+014 TGV-022

This window shows sensors TEV and TGV (neither °C nor °F are displayed):
TEV = TGV hopper thermostat = thermostat hopper defrost

By pressing Production again, you return to the starting screen.

CLEANING key
By pressing this key, the beaters and the pumps will run 30 seconds. This is a timed function which automatically ends when the programmed time (30 seconds) ends. This machine has an automatic system commanding the wash of parts in contact with food products every 14 days. This system, called "WASH", inhibits the production at the end of the 14th day.
Function KEYBOARD LOCK
In order to clean the keyboard with a clean cloth, it is recommended to lock the keys on the board as follows:

Press the key  3 seconds, the check lamp will blink to indicate that the keyboard is now locked. You can clean it, now, with no risks. To unlock, press again 3 seconds and the check lamp will switch off.

PASTEURIZATION key
This program will never start if the mix in one of the hoppers has reached the low level. If the lowest level in the right-hand hopper is not covered, the display shows "MIX OUT 2", if the lowest level in the left-hand hopper is not covered, the display shows "MIX OUT 1", if both are not covered, the display shows just "MIX OUT 1"; the led 

lights and an acoustic signal will play continuously. The pasteurization process takes place every day at 2:00 (if programmed).
AUTOMATIC PASTEURIZATION CYCLE: while the machine is in production mode and the mix is over the mean level, the automatic heat treatment cycle will automatically start at a certain time (as a rue, at 2,00).
During the Pasteurization cycle, the mix in the hopper and in the cylinder is heated till 65°C are reached, it is then held at this temperature for 30 minutes and, last, cooled down to 4°C.
At the end of the cyle, the display shows the message "Pasto End" as well as the date and time of operation end. The machine will then automatically pass to the STORAGE function.
For icecream to be served, press STOP and soon after PROD.

Manual start of the Pasteurization process (if the step "Pasto Start Time" has not been set) requires you to press the Pasteurization key and hold it 5 seconds down.

NOTE:
Once it has started, the pasteurization cycle cannot be stopped. The complete cycle takes about 2 hours. During the heat treatment and Pause, the mix inside the machine is very hot, so neither try to take it out, nor to disassemble the machine.

WARNING
Neither serve ice cream, nor disassemble the machine during the heat treatment because the profduct is very hot and under pressure.

STORAGE key
By pressing the Storage key, the product is conveyed into the hopper and into the cylinder at a temperature of 4°C.

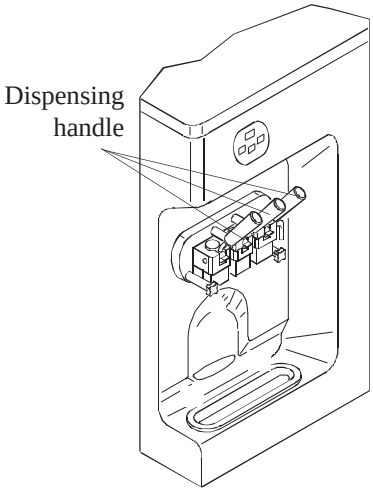
LEVEL
If the mix in left hopper falls below the minimum level, "Mix Out 1" displays steadily on the first line, if the mix in right hopper falls below the minimum level, "Mix Out 2" displays steadily on the first line, finally if both levels fall below the minimum level, only "Mix Out" displays steadily on the first line .

In all these cases the low level hopper led on the keyboard lights up and the buzzer beeps continuously.
The second line displays the number of cones that can be drawn (Last Cones) before the machine automatically sets to Storage.

NOTE:
When the "Mix Out!" message is on, it is not possible to enter the following Production or Pasteurization pages.

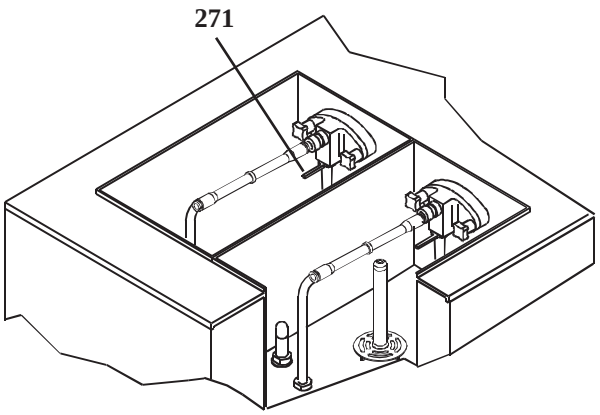
3.3 SPIGOT HANDLE

In order to dispense the product, place a cup or a cone under the spout and slowly pull down the disepnsing handle. As soon as the product comes out, twist the cup or the cone to form a cone-shaped serving. When the portion has reached the desired size, close the dispensing handle and quickly pull the cone or the cup down in order to sharpen the tip.



3.4 "R" PUMP

"R" pump allows, by changing position of regulator pos. 271, to vary proportions between air and mix conveyed to the freezing cylinder; so, within certain limits, it allows overrun regulation depending on mix used.
"R" pump regulator should be set to the middle position.
If, after dispensing a significant number of cones, ice cream is too heavy and wet, you may move R pump regulator a notch at a time towards the right. If ice cream comes out of spigot mixed with air bubbles, then turn R pump regulator a notch at a time towards the left.



3.5 PRELIMINARY OPERATIONS, WASHING AND SANITIZING

Before starting the machine for the first time, it is necessary to thoroughly clean its parts and sanitize all parts coming into contact with the mix. See section 5..

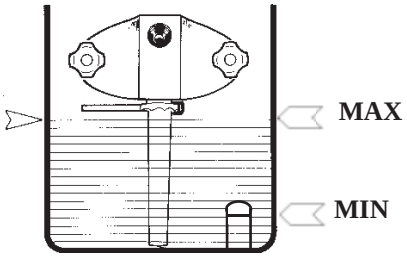
3.6 STARTING THE MACHINE

After installing the machine according to the instructions given in the chapter **INSTALLATION**, and after carefully cleaning and sanitizing the machine, proceed as follows:

Remove the compression pipes from tanks bottoms and place them in the sanitizing solution.

Filling the tanks:

- Take 1 bag of mix from the refrigerator.
  NB.: Mix to be poured at a temperature of 4-5°C.
- Pour one bag of mix intoeach tank allowing it to be convenyed into the freezing cylinders. Mix level in the tank must never reach the pump (see picture) and more mix must be added when level goes below about 2 cm from tank bottom.
- Lower the distribution handles and wait until only full strength mix will come out of the lid; close the handles.



Connecting the mix pressure pipe:

- Keep on pouring the mix and wait till the cylinders have been completely filled (during that time you see bubbles in the tanks); with sanitized hands, draw the compression pipes out from the sanitizing solution and insert them into relevant tank bottoms.
- Turn the compression pipes clockwise and align them to the pump, insert the connection pipes (pos. 207) well into the compression pipes, then into the pumps and lock them. Mix inside the tanks shall never reach the pump (see the picture); furthermore mix shall be added whenever level is 2 cm from tank bottom.
- Place tank covers back.
- When selecting Production, now, a Pasteurization program will automatically be executed, before one can dispense ice cream. This will guarantee a better condition of the product.
- When the Pasteurization program is over, select the function Production and after a few minutes, ice cream is ready for distribution.

3.7 PRODUCTION

Dispense ice cream without exceeding maximum production rate, as shown in the page 10 table; if you keep within this rate of production and refill the machine with fresh mix, the machine will never stop functioning, even during rush hours.
When the first line of the display reads "Mix Out 1", this means that the minimum level of left-hand tank is uncovered and therefore, that it is essential to add mix because the machine will dispense a maximum of 5 more cones before entering Storage mode automatically. If the minimum level is uncovered in the right-hand tank, the first line of the display will read "Mix Out 2"; if both levels are uncovered, the display will read "Mix out".

In all of these cases, the LED 

will switch on and an acoustic signal will sound continuously. The second line of the display will show the number of cones that can still be dispensed.
Out of business hours, keep machine set at STORAGE by pressing the STOP key and the STORAGE key. You will also save a lot of electricity because the compressor runs only when necessary in order to store the product at the right temperature. On reopening, just set the machine at PRODUCTION and within a few minutes the machine will be ready for service.
If, af ter a power failure, the machine has not worked a long time, it is indispensable to check the product temeprature before starting service again; if it is above +6°C, empty, wash and sanitize the machine, last refill it with frex mix at +4°C.
The function of PRODUCTION is further consisting of 9 functions for different product combinations in both tanks. These functions can be selected by pressing more and more the PRODUCTION key (holding the key down for 3 seconds) after entering in the same function, within 30 seconds.
Funcitons list:

Left side	Right side
CUSTARD	CUSTARD
CUSTARD	FRUITE
CUSTARD	YOGURT
FRUITE	CUSTARD
FRUITE	FRUITE
FRUITE	YOGURT
YOGURT	CUSTARD
YOGURT	FRUITE
YOGURT	YOGURT

3.8 PASTEURIZATION

This machine is pre-set to the daily automatic execution of both tanks and cylinders mix Pasteurization.
Product inside the tank must anyway be over the half of tank capacity (level covered).
The machine automatically executed heating and cooling programs and then stores the product at +4°C.
This Pasteurization can anyway be executed manually: to this purpose, it is necessary to first press STOP and then act on the SELECTION key till the PASTEURIZATION led will switch on.
In the event of a black-out during the pasteurization cycle, the machine will automatically carry out the program. On reopening your shop, press STOP and then select the production function; within a few minutes ice cream will reach its right consistency to be served.
In the event of extended power failure, it is utmost necessary that, before dispensing ice cream again, the temperature of the mix inside the tank is checked, so as to pasteurize the mix in case it is beyond 6°C. If the power failure lasts several hours, it is then necessary to clean the machine and refill with fresh mix.

3.10 PROGRAMMING FOR THE USER

To enter in Programming User, press STOP and RESET key at the same time till the message "MANAGER MENU" is on display, then release.

Press Stop to enter in the next step Increment  or Decrement 

when you want to change the value. See programming table.

In order to leave the porgramming mode, it is enough no key is pressed for 15 seconds, or just press CLEANING. The machine will now return to STOP.

Step	Display ITA	Display ENG	Min	Max	Default
U01	Ore	Hours	00	23	
U02	Minuti	Minutes	00	59	
U03	Giorno Settimana	Day of Week	SUN	SAT	
U04	Giorno del Mese	Day of Month	01	31	
U05	Mese	Month	01	12	
U06	Anno	Year	2000	2099	
U07	Linguaggio	Language	ITA	DEU	ENG
U08	Ora avvio Prod.	Start prod time	00	23 + NO	08
U09	Ora avvio pastorizzazione	Start pasto time	00	23 + NO	02
U10	Abilita beep liv.	Liv. beep enable	NO	YES	YES
U11	Lato attivo	Active side	01	03	
U12	Visualiz. 12 ore	12 Hour Clock	No	Yes	No
U13	Conserv.autom	Autom. Storage	No	Yes	No
U14	Prodotto Lato Sx	Prod. Left Side	SoftIce	Yogurt	SoftIce
U15	Prodotto Lato Dx	Prod. Right Side	SoftIce	Yogurt	SoftIce
U16	HOT 1	HOT 1	000	120	100
U17	HOT 2	HOT 2	000	120	100
U18	HOT 1 Frutta	HOT 1 Fruit	050	080	060
U19	HOT 2 Frutta	HOT 2 Fruit	050	080	060
U20	HOT 1 Yogurt	HOT 1 Yogurt	000	120	080
U21	HOT 1 Yogurt	HOT 1 Yogurt	000	120	080
U22	Extra Agitaz.Vas	Extra Hop. Agit.	No	Yes	No

U08 Start Prod.Time
Setting of the time at which automatic Distribution will start. If set to "no", automatic Distribution is disabled.

U09 Start Stor. Time
Set the time at which Storage will automatically start.
If set to "no", automatic Storage is disabled.

U10 Lev. Beep Enable
If set to Yes, the machine will beep intermittently when the mix is below the medium level, except in Stop mode, when it will not beep even if the function is enabled.

U11 Active Side
Three possible options (1, 2 or 3). Set the side on which you want to work:
1=left; 2= right; 3= both

U12 12 Hour Clock
Yes = enables display of 12-hour time format
No = displays 24-hour time format

U13 - Autom.stor.
Non pasteurizing machine: step not used.
Storage time is set in step U09.
Pasteurizing machine:
if U13=no, Pasteurization starts at the time set in step U09
if U13=yes, Storage starts at the time set in step U09

U14 - Prod. Left Side
Identifies the type of product on the left side: Custard, Fruit or Yoghurt.

U15 - Prod. Right Side
Identifies the type of product on the right side: Custard, Fruit or Yoghurt.

U16 HOT 1
Side 1 (left) HOT value. Indicates the reference value when step U14 is set on Custard.
Increasing this number also ice cream hardness and beater motor absorption value will increase.

U17 HOT 2
Side 2 (right) HOT value. See previous step.

U18 - HOT 1 Fruit
HOT value in case of Fruit production in side 1 (step U14 set on Fruit).
Increasing this number also ice cream hardness and beater motor absorption value will increase.

U19 - HOT 2 Fruit
HOT value in case of Fruit production in side 2 (step U15 set on Fruit).
Increasing this number also ice cream hardness and beater motor absorption value will increase.

U20 - HOT 1 Yogurt
HOT value in case of Yoghurt production in side 1 (step U14 set on Yoghurt).
Increasing this number also ice cream hardness and beater motor absorption value will increase.

U21 - HOT 2 Yogurt
HOT value in case of Yoghurt production in side 2 (step U15 set on Yoghurt).
Increasing this number also ice cream hardness and beater motor absorption value will increase.

U22 - Extra Hop. Agit.
When set on Yes, it enables hopper periodical beating.

4. SAFETY DEVICES

4.1 ALARMS

The machine is provided with a self- CHECK device to indicate possible troubles.
The display shows the type of Alarm occurred. An acoustic signal will also warn the operator.
Press RESET in order to cancel the alarm from display.
Use the table below to check what alarm occurs.
The machine can used in Production mode also when a non-critical alarm has taken place; if the alarm is, instead, a critical one, the machine will not allow to enter in production and it is necessary to press STOP and not to use the machine till its repair. Alarms are listed in the table below:

ALARM	DESCRIPTION
Mix Out 1 and 2	The display indicates Mix Esaurita-Mix Out when the mix is below the level sensor. When the mix is low and in Production you distribute a number of cones same as/or higher than the value set in step Ultimi Coni- Last Cones, not only will Mix Esaurita- Mix Out - be displayed, but also your machine will set at “”Hot reached”” position, so disabling all outputs from side where cones are out.
Safety Therm.Cyl 1	Safety thermostat cylinder 1tripped. Machine sets at Stop mode. - By PSP, only -
Safety Therm.Cyl 2	Safety thermostat cylinder 2 tripped. Machine sets at Stop mode. - By PSP, only -
Safety Therm.Hop	Hopper Safety Thermostat tripped. Machine sets at Stop. - By PSP, only -
Overload Beater 1	Overload (bimetallic) beater motor relevant to cylinder 1 tripped. Machine sets at Storage mode.
Overload Beater 2	Overload (bimetallic) beater motor relevant to cylinder 2 tripped. Machine sets at Storage mode.
Pressure Switch	Pressure Switch tripped. Machine sets at Stop: - if it trips for the third time within 1 hour - if pressure switch contact is opened 2 minutes running. If the machine was in Pasteurization mode, Pasteurization program shall be executed again. Check cooling water flow.
Overload Compres	Overload Compressor Motor. Machine sets at Stop.
Al.Hopper Probe	Hopper sensor faulty. This is a critical alarm: consequently, the machine sets at Stop, from Production as well as from Storage and Pasteurization modes.
Al.Cylind.Probe 1	Cylinder 1 sensor faulty. This is a critical alarm: consequently, the machine sets at Stop, from the Storage and Pasteurization modes; it stays in the same function when in production mode, because consistency is controlled.
Al.Cylind.Probe 2	Cylinder 2 sensor faulty. This is a critical alarm: consequently, the machine sets at Stop, from the Storage and Pasteurization modes; it stays in the same function when in production mode, because consistency is controlled.
Al.IceHop.Probe	Hopper evaporator sensor faulty. This alarm does not cause the machine to stop (it goes ahead with the outstanding function). In Pasteurization Heating step, the alarm is eliminated.
Spigot opnened	Safety Magnet Switch. If opened 10 sec., it resets Wash message (Wash). IMS opening also resets Pasteurization flag, so that if the machine was in Pasteur. mode, you can directly enter in Production by opening and closing the front lid.
All.Evapor.Probe 1	Alarm Cylinder 1 evaporator sensor. This alarm does not cause the machine to stop (it keeps on running in the outstanding function). In Pasteurization Heating step, the alarm is eliminated.

ALARM	DESCRIPTION
All.Evapor.Probe 2	Alarm Cylinder 2 evaporator sensor. This alarm does not cause the machine to stop (it keeps on running in the out-standing function). In Pasteurization Heating step, the alarm is eliminated.
Power on	Power return after a blackout. Check blackout table in Pasteurization and Production. The event is logged in any function and stored in the events.
IceCylinder 1-2x10	Defrost cylinder read by sensors TE. In Production, if one of the two TE falls under the value set in step Ice Cyl., the machine sets to HOT reached position and stores the 1 x10 IceCyl. alarm or the 2 x10 IceCyl. alarm among the events (storage is carried out every 10 alarms logged). The alarm might be caused by an insufficient feeding to the cylinder. Check the pump efficiency. The alarm reset will follow as soon as the temperature in the cylinder raises back. If, instead, the alarm is displayed in Stop, it is necessary to check/replace sensor TE, because the readable temperature end scale is read by the CPU.
Timeout Prd. 1-2	In Production, activation time of the beater motor is checked. If the beater motor is 10 minutes ON (Timeout Prd.) and Hot has not been reached, the machine sets at position “”reached-HOT”” with alarm “”Timeout Prd.”” in the event list. The Timer will be reset on MIR and on MA starting. Check mix charge in cylinder, pump in the hopper and the freezing unit.
Belt alarm	In Pasteurization Heating step, if the temperature TGV2 becomes > than TEV-value programmed in step DELTA TGV-TEV, “”Allarme cinghia- Belt alarm”” is displayed and the machine sets at Stop. Check the driving belt or if the rotor is in its seat. Warning: this alarm is not active if one of the sensors TEV or TGV is inhibited.
W -nn g	In Production, “”Lavare tra n gg”” Wash in n days is displayed: this means that n days remain until machine wash. Alarm Wash might also be caused by leaving machine 24 hours in stop position with mix above the level sensor See WEEKLY CLEANING.
Wait! (Do not serve!)	In Production, every time consistency value is below the one set in step Hot Lock, cone red led lights up to indicate wait for ready ice-cream and “Wait” is displayed. If, in such a case, you try to dispense cones, all units stop (MA, MC, EVFC and MP) and an intermittent beep will be emitted until the photocell is no longer busy. As soon as it is released, both MA and MC re-start in order to bring ice cream to its proper consistency.
Invert Phases!	It is necessary to exchange 2 phases on the three-phase line in order to get the correct beater rotation direction. The alarm resets by pressing the Reset key (after exchanging 2 phases). Check lasts 1 minute only, after switching the machine on.
Pasto needed	When machine has been set at Stop with mix above low level sensor for over 60’, TEV temperature is checked and if it is 15°C or higher, Pasteurization is needed. So pressing the Production key, will cause the machine to automati-cally set at Pasteurization, unless you open its front lid and close it again. In this case, test on TEV ? 15°C will be cancelled for a time of 60’ and Production will be accepted. If in all these cases, TEV<15°C, all functions will be accepted with no time limits.
Why in STOP ??	If the machine is left in the Stop position with mix covering the level sensor, the message “”Why in STOP?”” will be displayed 30 seconds later and an intermittent beep will be emitted. All this to warn the user to set the machine at Production, Pasteurization or Storage. Above mentioned message will be deleted by entering inProduction, having low mix level, or pressing Reset (Stor.) key. To have the message back on the display, enter again in Production, Storage or Pasteurization.

ALARM	DESCRIPTION
All.Pist. aperti Piston opened	The “Piston opened” alarm (enabled only with T79=Yes) signals a piston open or missing piston in the spigot. To reset the alarm, close the pistons with the spigot fitted to show that the pistons are actually present. The alarm may occur again after an IMS or a power blackout. This alarm blocks access to all functions.
Close Lh/Rh/Middle Lever	In production it warns that MIR has been engaged for more than 15". In this case it is necessary to dispense a cone by pulling the relevant LH, RH or middle lever all the way down and reposition it in the closed position. If when the machine switches to Production, MIR is already engaged, the signal is activated immediately.
Modalità Provv. Temporary Mode	This message is displayed on pasteurization end if, during heating, the Overload Beater alarm has triggered or the Set HOT value has been reached repeatedly. See the paragraph relevant to Pasteurization.

NOTE:
The alarms "Overload Beater" "Al. Cyl. Probe" “Al.Evap.Probe” “Ice Cyl.” “Timeout Prd.” “No more Cones” concern each individual side and are disabled if the relevant side is not active.

4.2 BLACKOUT

If there is a blackout when machine is in Cleaning mode, it will go to Stop when the power comes back on.

If the machine was in Pasteurization Heating phase or Pause, when power returns the machine will continue with the function it was performing when power was lost (the display will show the message Power On).

If the machine was in Pasteurization Cooling phase, when the power returns the machine will check the TEV temperature and the duration of the blackout. If the time period is greater than the duration indicated in the table, the machine will completely repeat the pasteurization cycle, memorizing the alarm “Mancata Tensione” or “Power On” in the event log.
Instead, if the time period is less than that indicated in the table below, the machine will return to the function that was in progress at the time of blackout.

Tank and cylinder temperature	Blackout time
68°C ÷ 50°C	30 minutes
49°C ÷ 15°C	10 minutes
14°C ÷ 10°C	20 minutes
9°C ÷ 4°C	2 hours

f the machine was in Production or Storage mode, when power comes back on, the machine checks the TEV temperature and if it is below a level set by the manufacturer then the machine sets to the same function as before, showing the “Power On” alarm on the display. If TEV is greater than this value and the time exceeds the values in the table above, the Pasteurization cycle will be repeated.

5. CLEANOUT DISASSEMBLING AND REASSEMBLING OF PARTS IN CONTACT WITH THE PRODUCT

5.1 GENERAL DESCRIPTION

Cleaning and sanitisation are operations that must be carried out habitually and with maximum care at the end of each production run to guarantee the production quality and respect the necessary hygienic norms.
Giving dirt the time to dry out can greatly increase the risk of rings, marks and damage to surfaces.
Removing dirt is much easier if it is done immediately after use because there is the risk that some elements containing acid and saline substances can corrode the surfaces. A prolonged soaking is recommended.

5.2 WASHING CONDITIONS

- **Avoid using solvents, alcohol or detergents that could damage the component parts, the machine or pollute the functional production parts.**
- When manually washing never utilise powder or abrasive products, abrasive sponges or pointed utensils; there is a risk of dulling the surfaces, removing or deteriorating the protective film that is present on the surface and scoring the surface.
- Never ever use metal scouring pads or synthetic abrasives to stop any scouring action that could remove ferrous parts that could cause oxidisation or make the surfaces vulnerable.
- Avoid using detergents that contain chlorine and its composites. The use of these detergents such as bleach, ammoniac, hydrochloric acid and decalcifiers can attack the composition of the steel, marking it and oxidising it irreparably and causing damage to the “plastic” parts.
- Do not use dishwashers and their detergent products.

5.3 SUGGESTIONS

- Use a non-aggressive detergent solution to wash the parts.
- Manually wash the parts in water (max 60°C) using a non-aggressive detergent and the cleaning brushes supplied as standard.
- Use drinking water (bacteriologically pure) to rinse the parts.
- To sanitise leave the disassembled parts in sanitised tepid water for 10-15 minutes (**use the sanitising product following the instructions of the manufacturer**) and rinse them before reassembling.
- When the washing procedure has been completed and before the reassembly of each component dry thoroughly with a clean and soft cloth that is suitable for coming into contact with foodstuffs, to avoid leaving any humidity rich in mineral salts and chlorine that could attack the metal surfaces and leave opaque traces.

Carpigiani recommends the use of XSAN sanitising detergent to wash the machine because it has been checked and approved by our laboratories.
The use of XSAN permits optimising the washing and sanitising process inasmuch that it eliminates two phases of the procedure (a rinse and a washing phase). Substantially, the use of XSAN saves time facilitating and simplifying the washing/sanitising procedures.

ATTENTION

It is also essential that each time the machine is washed and parts in contact with the ice cream mix are removed, to make a visual check of all parts in thermosetting materials, plastics, elastomers, silicone and metal that come into contact with the product (for example, scrapers, pump gears, beaters, etc…).
Each part must be whole, not worn and without cracks or splits, or opaque, if originally polished/transparent.
Carpigiani refuses to accept any liability for damage caused through imperfection and/or failures not found and promptly solved, including with the use of original replacement parts, and is happy to provide help and consultation for all specific customer requests.

5.4 HOW TO USE XSAN DETERGENT/SANITIZER

Prepare a water-based solution (at a temperature between 45 and 60°C) and **XSAN** at a concentration between 1 and 3%, according to water hardness.

Washing/sanitizing by soaking
- Remove larger residues by hand.
- Remove finer residues with a jet of water.
- Soak the parts to be cleaned in the **XSAN** solution.
- Leave the solution to act for about 10-15 minutes.
- Rinse the parts with care, using plenty of clean drinking water.

5.5 PROGRAMMED CLEANING TIME

The machine is provided with an automatic system wich calls for washing of the parts in contact with the product for example every 14 days.
This system, identified as “WASH”, disables the dispensing function at the end of the fourteenh day after the latest cleaning. On the display, the message “**WASH TODAY**” appears.
In Distribution mode, the display indicates the number of days to machine next cleaning.

WARNING

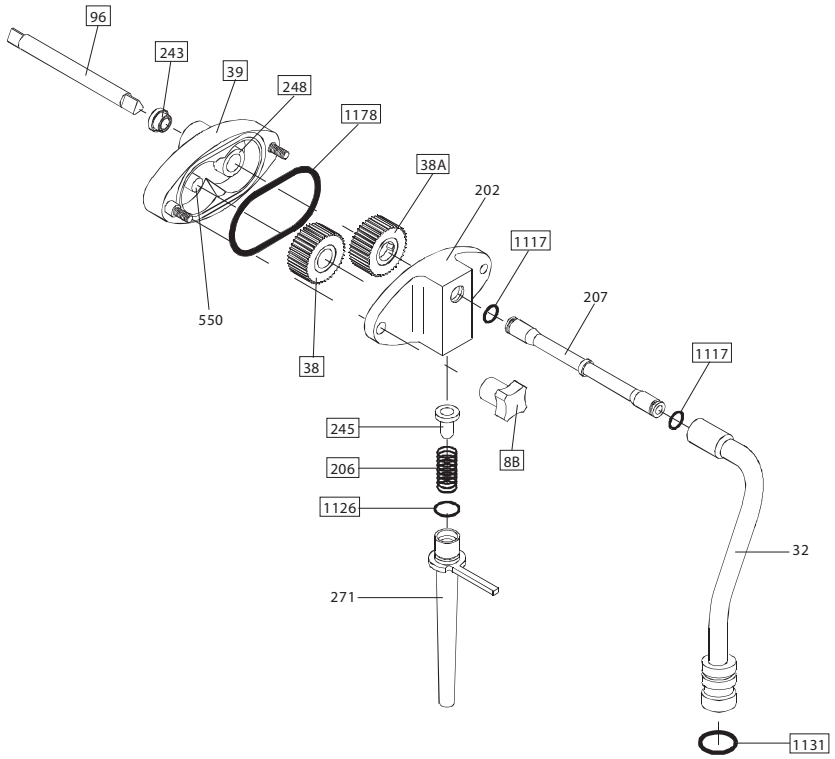
Cleanout and sanitization must be carried out at the programmed date indicated on the display (for example every 14 days), as a habit and with utmost care, in order to guarantee quality of production in the observance of healthy rules.

5.6 DRAINING AND CLEANING

1. Place an empty pail under the spout.
2. Press the STOP button.
3. Pull the dispensing levers and drain the ice cream.
4. Select CLENOUT function .
5. When the product coming out becomes liquid, push STOP button and leave the spout open.
6. Disconnect the connection pipes (pos. 207) from pumps and compession pipes (pos. 32), turn the latters by 90° and lift them in order to take them out from their own seats inside the tanks. Wait until all the product has flown out from tanks, now. Disassemble the pumps by turning them clockwise by 45° and pulling them towards you.
7. Remove tank beaters (see par. 5.4).
8. Wait until the liquid mix flows out completely and then set the distribution handles back to closing position. Fill the tanks with 10 litres clean water. Clean tank walls, level sensor and tank mixer seats with the brushes provided. With a smaller brush, also clean pump and compression pipe seats.
9. Place an empty pail under spout. Open the spigot piston and let the water drain out.
10. Rinse with warm water until the solution runs clear.
11. Select CLENOUT function and let the beater run for 10 seconds.
12. Press the STOP button, place a bucket beneath the dispensing spout, lower the distribution handles and drain all the water from the machine.
13. Fill the tanks with sanitizing solution prepared with 45-60°C water. Clean the tank walls, the level sensors and the mixer seats using the supplied brushes.
14. Select the CLEANING function and let the machine run for 10 seconds.
15. Press the STOP button. Allow the sanitizing solution to react for at least 10/15 minutes.
16. Lower the distribution handles and drain out all the sanitizing solution completely.

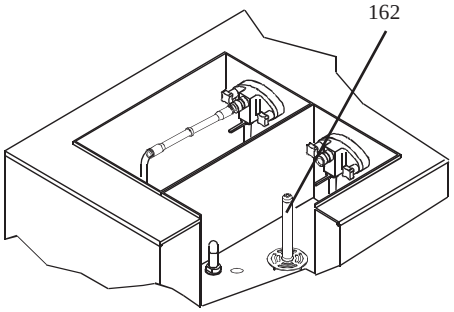
5.7 DISASSEMBLING MIX PUMP

1. Remove the pumps by turning them 45° clockwise and pulling backwards.
2. Take the connection pipes (pos. 207) out from the pumps and compression pipes pos. 32). Turn DX and SX compression piipes 90° anticlockwise and lift them while taking them out from their seats inside the tanks. Remove ORs (1117 and 1131).
3. Remove air regulators (pos. 271), now, by turning them anticlockwise and pulling downwards.
4. Remove spring (pos. 206) and valve (pos. 245). With the extracotr provided, remove OR (pos. 1126).
5. Unscrew the two knobs (pos. 8B) in order to separate cover (pos. 202) and pump body(pos. 39).
6. Hit the pump body in order to remove its gearsi (pos. 38 and 38A). With the extractor, remove OR (pos. 1178).



5.8 DISASSEMBLING THE TANK MIXER

After taking out the pump, also remove the mixer (pos. 162) by pulling it upwards.

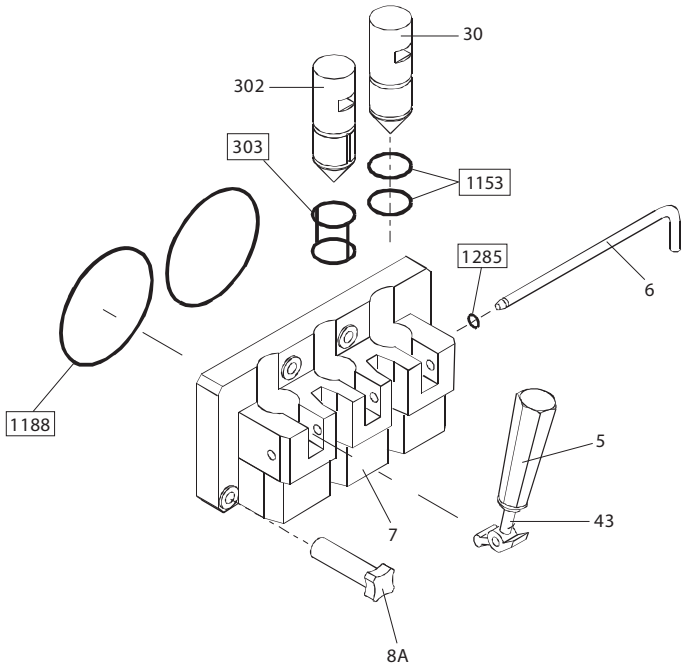


5.9 DISASSEMBLING FRONT LID

CAUTION

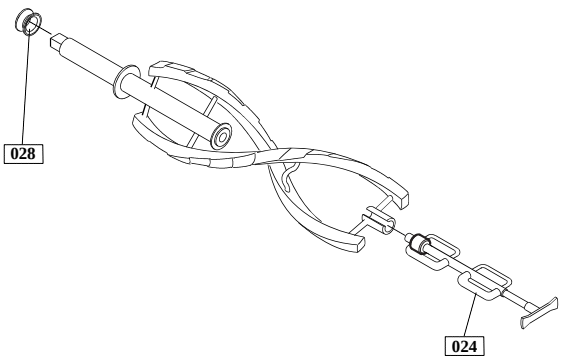
Before disassembling the front lid, make sure that tanks and cylinders are completely drained.

1. Remove the two retaining knobs (pos. 8A) and pull the door assembly towards you sliding it off the two front panel studs.
2. Pull the dispensing handle (pos. 5) so the pistons (pos. 30 and 302) raise in their housing.
3. Remove the pivot pin o-ring (pos. 1285) and the pivot pin (pos. 6) out releasing the dispensing handle (pos. 5)
4. Using the dispensing handle pull the piston (pos. 30 and 302) out completely.
5. Using the o-ring extractor, remove the o-rings (pos. 1153, 303 and 1188).



5.10 DISASSEMBLING OF THE BEATER

1. Draw the beater out from the cylinder.
2. Slide the beater seal (pos. 28) out from the beater shaft.
3. Pull the idler (pos. 24) slightly to the front of the beater until the groove in the shaft of the idler lines up with the slot on the beater frame. Draw the idler out.



WARNING

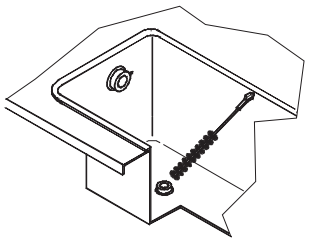
Like all moving parts, the complete beater is also subject to wear and tear. For this reason, we recommend checking the amount of wear to parts in direct contact with one another (beater/beater idler and beater/cylinder walls) on a regular basis during scheduled cleaning operations and in any case, every six months of machine operation.
In particular, make sure that the wear on the bushing on the beater idler is no more than 2 mm, as indicated by the marking on the bushing itself. If there is more than 2 mm wear, it is necessary to replace the beater idler.

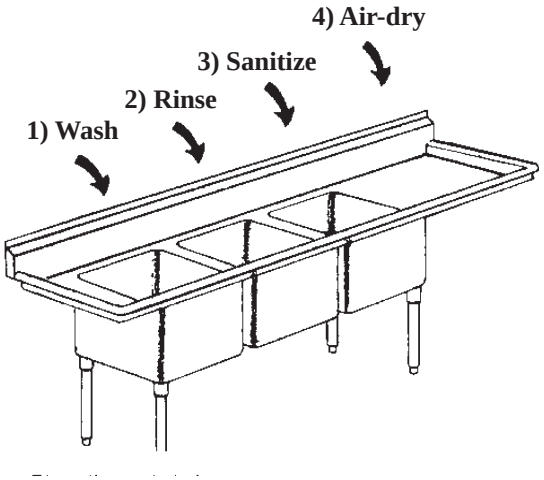
5.11 WASHING AND SANITIZING COMPONENTS

CAUTION
For the use of sanitizers, instructions on labels are to be followed.

1. Fill another sink with sanitizing solution prepared with 45-60°C water.
2. Dip the disassembled parts in the sanitizing solution and leave them there for at least 10/15 minutes.
3. Carefully rinse the components using plenty of drinking water.
4. Place the components on a clean tray to air-dry.
5. Return to the machine with a small amount of sanitizer.
6. Dip a brush into the sanitizer and thoroughly brush the freezing cylinder
7. Spray the cylinder bottom and and the tank walls with sanitizer.

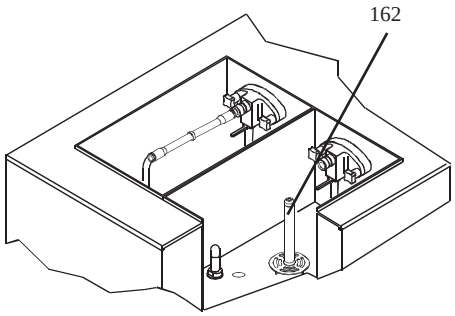
Repeat step 5, 6 and 7 several times





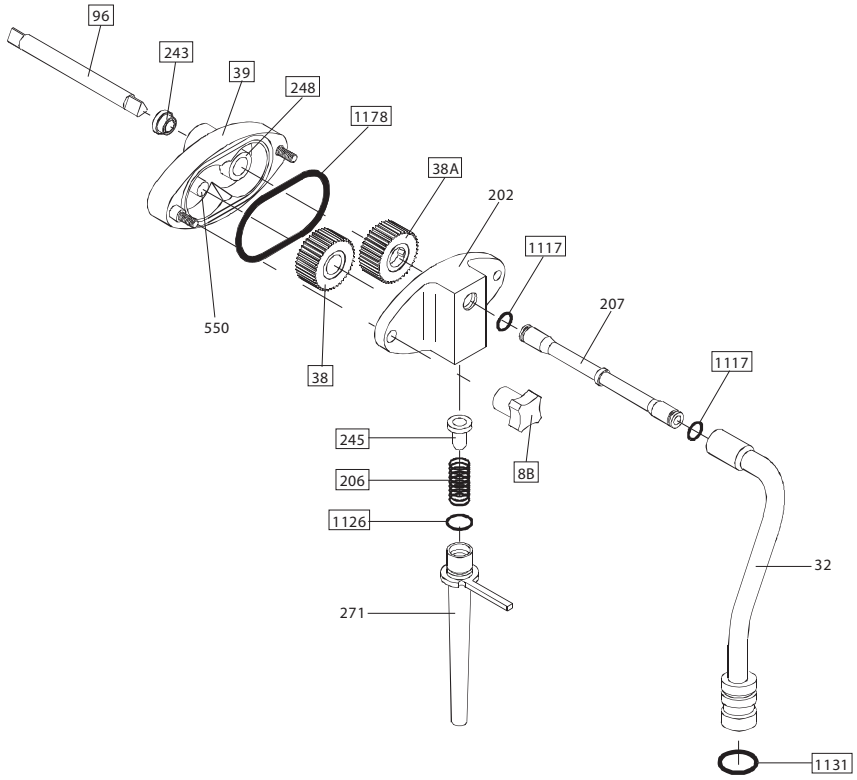
5.12 REASSEMBLING THE TANK MIXER

Place the mixer (pos. 162) back in its seat: pay attention to engage it onto its shaft correctly.



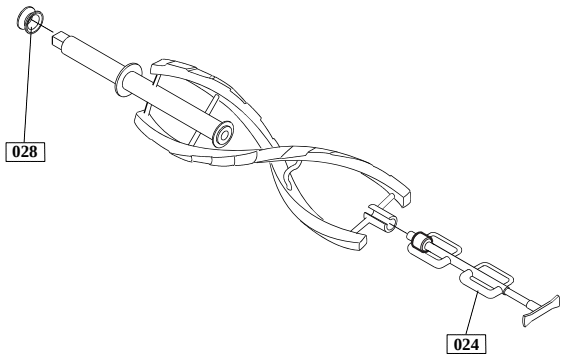
5.13 REASSEMBLING THE MIX PUMP

1. Lubricate and place the o-ring (pos. 1117) back on the connection tube (pos. 207).
2. Lubricate and place the o-rings (pos. 1126 and 1131) back on the pressure pipe (pos. 32).
3. Insert the connection tube (pos. 207) assembly in the pressure pipe (pos. 32). Dip the pressure pipe into a sanitizing solution.
4. Lubricate and install the o-ring (pos. 1178).
5. Lubricate the sides as well as the center of the pump gears (pos. 38 and 38A) with a thin film of lubricant and insert them into the pump body. **Do not lubricate the teeth of the pump gears.**
6. Lubricate and place the o-ring (pos. 1126) on the feeding tube (pos. 271).
7. Hold the pump cover (pos. 202) upside down and insert the back flow valve (pos. 245) and spring (pos. 206) in their pump cover housing.
8. Insert the feeding tube (pos. 271) in the pump cover: push and turn it clockwise.
9. Assemble the pump cover (pos. 202) with the feeding tube downwards onto the pump body and turn the two knobs (pos. 8) tightly; install the mix pump in the tank with the locking pin hook on the right, turning the pump anticlockwise until it locks onto the tank locking pin.



5.14 REASSEMBLING THE BEATER

1. Lubricate the sides of the beater seal (pos. 28) and slide it onto the beater shaft.
2. Insert the end of the idler shaft (pos. 24) in the rear housing and align the idler shaft groove with the frame front slot. Push the idler into position.
3. Insert the beater assembly into the cylinder. Pushi while turning it clockwise until it engages in its rear hub, otherwise the dispensing head cannot be fastened properly, mix can flow out and serious damage may occur.

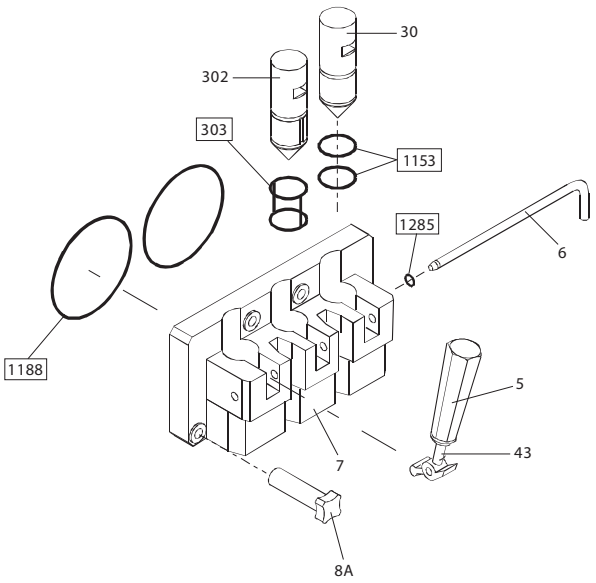


WARNING

Like all moving parts, the complete beater is also subject to wear and tear. For this reason, we recommend checking the amount of wear to parts in direct contact with one another (beater/beater idler and beater/cylinder walls) on a regular basis during scheduled cleaning operations and in any case, every six months of machine operation.
In particular, make sure that the wear on the bushing on the beater idler is no more than 2 mm, as indicated by the marking on the bushing itself. If there is more than 2 mm wear, it is necessary to replace the beater idler.

5.15 REASSEMBLING FRONT LID

1. Lubricate and slide the piston o-rings (pos. 1153 and 303) into their seats.
2. Insert the pistons (pos. 30 and 302), pointed end down, in the dispensing head (pos. 7) making sure that the piston square notch lines up with the rectangular opening on the spigot front.
3. Position the dispensing handle (pos. 5) on the lid (pos. 7) and insert the pivot pin (pos. 6) in its housing through the handle lever hole. Lubricate and insert the pivot pin o-ring (pos. 1285). Lubricate and slide the large front lid o-ring (pos. 1188) into its seat.
4. Insert the front lid assembly onto the two front panel studs and fasten it with the two knobs (pos. 8A) hand tight.



5.16 SANITIZING THE WHOLE MACHINE

The machine must be sanitized before mix is poured in. Proceed as follows:

1. Fill the tanks with sanitizing solution, prepared with 45-60°C water, up to the maximum level and allow the solution to flow into the cylinders.
2. Using the brush, clean the mix level sensors, the entire surface of the mix tanks, the surface of the mix pumps and the outside of the tank mixers.
3. Select CLEANOUT function and let the beater run about 10 seconds. Press the STOP button. Cylinders and pumps are now filled with the sanitizing solution.
4. Return to the machine with a small amount of sanitizer solution in a pail.
5. Dip the door spout brush in the pail of sanitizer and brush clean the dispensing spout. Repeat the operation twice.
6. Wipe the exterior of machine with clean sanitized towel. Repeat the operation twice.
7. Wait for at least 5 minutes before proceeding with the next instructions.
8. Place an empty pail under the front lid and pull the handle
9. Allow all of the sanitizer to drain. If the sanitizing solution does not flow out completely, keep the spigot open and select CLEANOUT function, let the beater runnig 5 seconds so that the last solution residues flow out, then push STOP.
10. Rinse with plenty of drinking water.

CAUTION

Do not keep the beater running more than the time strictly needed to complete washing and saniting since the beater would wear out without lubricating action of mix fats.

ATTENTION

Do not touch sanitized parts with hands, napkins, or else.

WARNING

Before starting again with ice cream production, rinse thoroughly with just water, in order to remove any residue of sanitizing solution.

5.17 PRIMING THE MIX PUMP

Tank filling:

- Take 1 bag of mix from the refrigerator.
- Pour one bag of mix into the each tank allowing it to drain into the freezing cylinders.
- Lower the distribution handles and wait till only full strength mix (not mix and sanitizer) will come out from front lid; close the handles.

Connecting the mix pressure pipe:

- Keep pouring the mix until the cylinders have been filled (bubbles shall be visible in the tank while filling); with clean and sanitized hands, remove the left and right compression tubes from the sanitizing solution, rinse them with drinking water, and insert them into the bottom of the tanks.
- Turn the compression pipes (pos. 32) clockwise towards the pumps. With sanitized hands, take the connection pipes (pos. 207) from the sanitizing solution and insert them well into the compression pipes (pos. 32), then into the pumps and lock them. Mix inside the tanks shall never reach the pump (see the picture); furthermore mix shall be added whenever level is 2 cm from tank bottom.
- Place tank covers back.
- When selecting Production, now, a Pasteurization program will automatically be executed, before one can dispense ice cream. This will guarantee a better condition of the product.
- When the Pasteurization program is over, select the function Production and after a few minutes, ice cream is ready for distribution.

6. MAINTENANCE

6.1 SERVICING TYPOLOGY

ATTENTION

Any servicing operation requiring the opening of machine panels must be carried out with machine set to stop and disconnected from main switch!
Cleaning and lubricatingmoving parts is forbidden!
"Repairs to the wiring, mechanical, air supply or cooling systems, or to parts of same must be carried out by qualified personnel with permission to do so and if necessary, according to the routine and extraordinary maintenance schedules as envisaged by the customer with reference to specific intervention methods, according to the use for which the machine is destined".

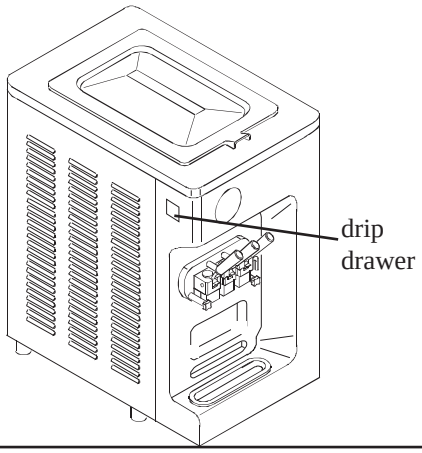
Operations necessary to proper machine running are such that most of servicing is completed during the machine production cycle.

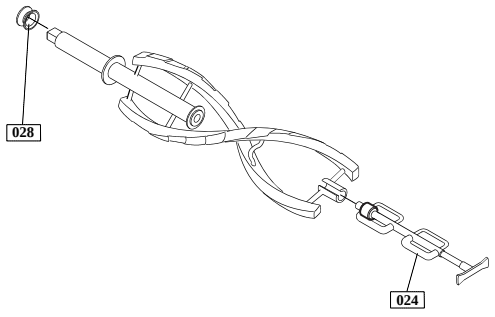
Herebelow you can find a list of routine servicing operations:

- **Cleanout and replacement of stuffing box**
  Should you ever find that some product drips from drip drawer, it means that stuffing boxes (pos. 28) have lost their tightness; when disassembling the beater, it is consequently necessary to check them and, according to the machine working period, to replace and alternate them with the stuffing boxes included in the machine accessory kit.
  If the stuffing boxes show no defects, they can be used again after washing them, when at room temperature they have regained their original shape.
  Replace stuffing boxes as follows:
  - Draw the beater assembly out.
  - Remove stuffing box from its seat
  - Lubricate the new stuffing box and mount it
  - Before putting the stuffing box away, clean and lubricate it so as to reach its elasticity again.

WARNING

If you continue to work after noting traces of product in the drip drawer, you further accentuate the leakage of the stuffing box; this can lead to a malfunction of the machine serious enough to halt production.





WARNING

Like all moving parts, the complete beater is also subject to wear and tear. For this reason, we recommend checking the amount of wear to parts in direct contact with one another (beater/beater idler and beater/cylinder walls) on a regular basis during scheduled cleaning operations and in any case, every six months of machine operation.
In particular, make sure that the wear on the bushing on the beater idler is no more than 2 mm, as indicated by the marking on the bushing itself. If there is more than 2 mm wear, it is necessary to replace the beater idler.

- **Cleanout of beater assembly, cleanout of pump or feeding needle, cleanout and sanitization of the all machine**
  According to procedures described in section 5 of this manual.
- **Cleanout of panels**
  To be carried out daily with neutral soap, seeing to it that cleansing solution never reaches beater assembly at its inside.

WARNING
Never use abrasive sponges to clean machine and its parts, as it might scratch their surfaces.

6.2 WATERCOOLING

By machines with watercooled condenser, water must be drained from condenser at the end of selling season in order to avoid troubles in the event that the machine is stored in rooms where temperature may fall under 0°C.
After closing water inlet pipe, withdraw drain pipe from its seat and let water flow out from circuit.

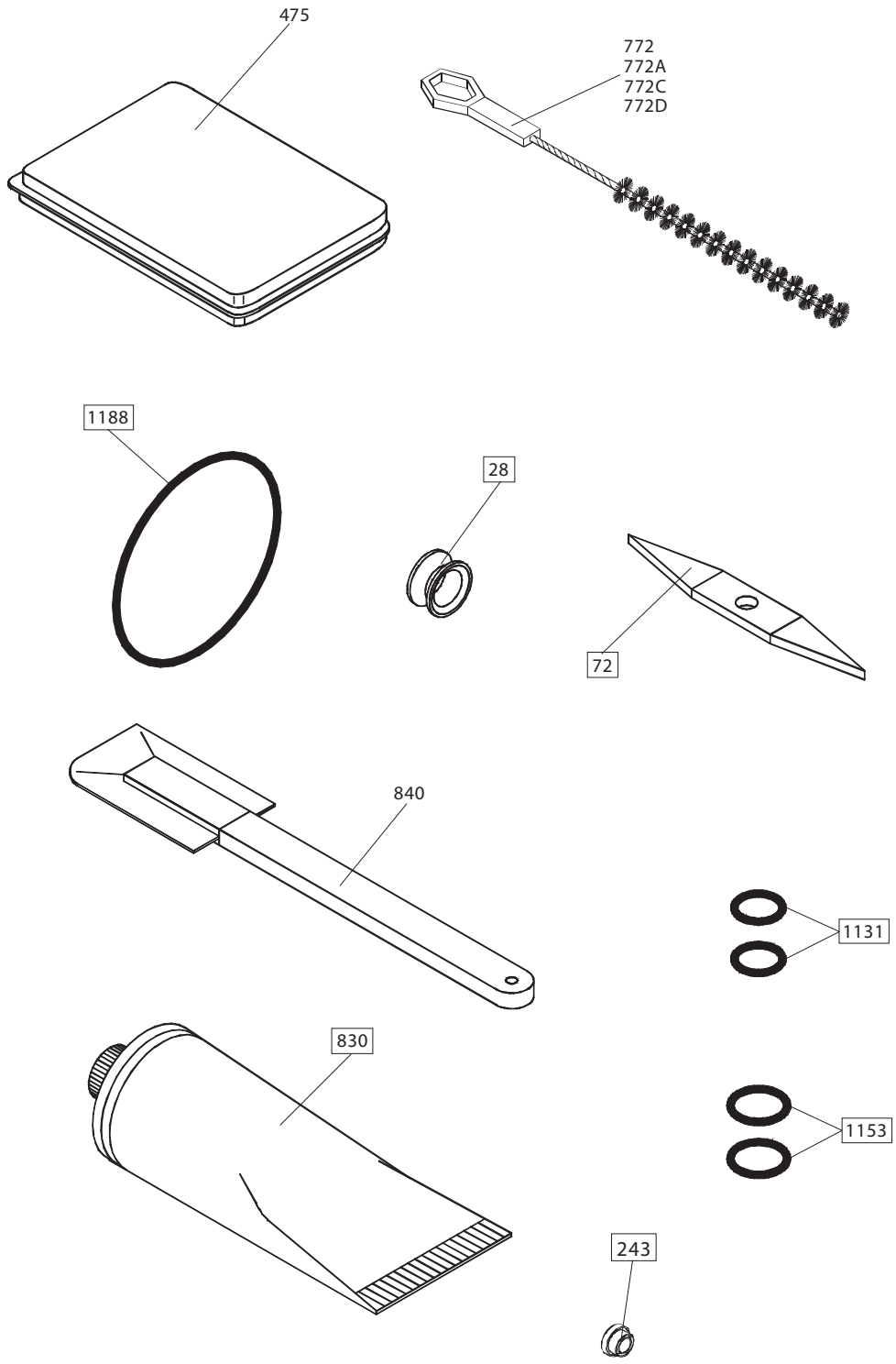
6.3 AIRCOOLING

Clean condenser, periodically, so as to remove dust, paper and what can prevent air from circulating. For cleanout, use a brush with long bristles or a bolt of compressed air.

ATTENTION!
When using compressed air, put on personal protections in order to avoid accidents; put on protective glasses

NEVER USE SHARP METAL OBJECTS TO CARRY OUT THIS OPERATION. GOOD WORKING OF A FREEZING PLANT MOSTLY DEPENDS ON CLEANING OF CONDENSER.

6.4 TABLE OF SPARE PARTS EQUIPMENT



Pos.	Description
28	Beater stuffing box
72	O ring extractor
243	Stuffing box
475	Accessories
772	Swab D8x250
772A	Swab D15x350
772C	Swab D40x400

Pos.	Description
772D	Swab D 30x640
830	Food-grade lubrificant tube
840	Cleaning spatula
1131	Gasket OR
1153	Gasket OR
1188	Gasket OR

7. TROUBLESHOOT GUIDE

IRREGULARITY	CAUSE	PROCEDURE TO FOLLOW
Compressor starts and then stops after a few seconds.	1. If machine is watercooled: water is not circulating. 2. If machine is aircooled: air is not circulating.	1. Open water inlet cock and check that pipe is not squashed nor bent. 2. Check that machine clearance is at least 80 mm from wall. 3. Call for service if necessary
Mix or ice cream come out above or below piston though it is closed.	1. Piston without OR or OR is worn-out.	1. Stop the machine and insert or replace it with a new one if worn-out.
Mix coming out of drip drawer	1. Stuffing box missing or worn-out.	1. Stop the machine and install it if missing. If worn-out, replace it with a new one.
Piston hard to operate.	1. Dry sugar on piston.	1. Stop the machine and wash thoroughly and grease piston and OR with edible fat.
Ice cream comes out from front lid .	1. OR missing or not properly fit. 2. Front lid knobs not tightened evenly.	1. Stop the machine and check and put remedy. 2. Stop machine. loosen and tighten them again.
Low ice cream overrun	1. "R" pump not properly adjusted	1. Change regulator (Pos. 271).